



FALL 2018

CS5551: ADVANCED SOFTWARE ENGINEERING

SMART SHOP

Submitted by:

Anusha Jasti (16271108)
Joshmitha Tammareddy(16266877)

PROJECT INFORMATION

VIDEO URL:

<https://www.youtube.com/watch?v=PTzQySCkNvM&feature=youtu.be>

GITHUB URL:

https://github.com/AnushaJasti/CS5551_Team_13-2_Project

PRESENTATION:

https://docs.google.com/presentation/d/10QGxnyJSrP1kn0h7GhWJFtTHcEWMbPTdQraShngtO_M/edit#slide=id.p

INTRODUCTION:

There are lot of shopping websites available. But if a user needs to buy something they have to visit different websites to search for a product which meets their requirements. It is a time consuming process and it also becomes difficult for the user to remember what they have liked in each website. The aim of this project is to reduce the time for users and to make their work easy and fast.

OBJECTIVE:

The main aim of our project is to integrate different shopping API's together so that the user does not need to search for the same item in different websites. To make the search easier and simpler

And also the main feature is to get the comparison of price as results from both websites are being displayed in a single page.

DESIGN SPECIFICATIONS:

-Search :

Camera Integration

Search by keyword

-Results :

Two different API's

Walmart

eBay

- each user has a user profile where the basic details of the user are being displayed

- in the user profile the user has an option to write review for a product which is stored in our firebase

- When a user searches for a item , they can view the reviews for that particular product retrieved from our firebase

- Each user can successfully logout of our application using the logout tab

SIGNIFICANCE:

By using this application user can save lot of time and it also becomes easy for them to search the item they require. They can also see the reviews written by other users in our application. User can also write reviews about the product which they had bought.

PROJECT WORK FLOW

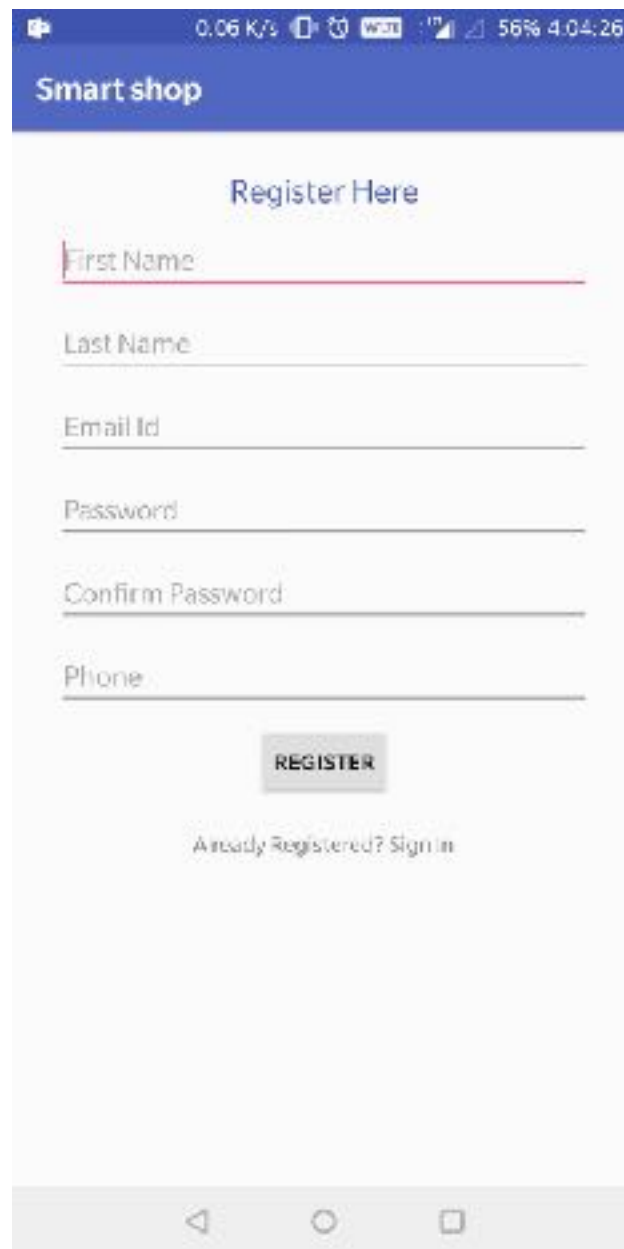
INCREMENT 1

During the first increment we have done sequence diagram and architectural diagram. Platform and environment setup has been done successfully.

INCREMENT 2



- During this increment we have done the required login page. The Google/ oAuth login and Facebook login is setup. The user can login using any of these.
- Registration page is also done. The user can also register into our application by giving their details.

A screenshot of a mobile application interface for 'Smart shop'. The top status bar shows '0.06 K/s', 'WIFI', and '56% 4:04:26'. Below the status bar is a blue header with the text 'Smart shop'. The main content area is white and features a 'Register Here' title. Below the title are six input fields: 'First Name', 'Last Name', 'Email Id', 'Password', 'Confirm Password', and 'Phone'. Each field has a red underline. Below the input fields is a grey button with the text 'REGISTER'. At the bottom of the form, there is a link that says 'Already Registered? Sign in'. The bottom of the screen shows the standard Android navigation bar with back, home, and recent apps icons.

- We have taken one API (Walmart) and results for the search product are displayed from this API.

- We have also done image search i.e the user can take a picture and search for it. For the image recognition we have used IBM Watson API. This API recognizes the logo , color etc and results are displayed according to that.

-



INCREMENT 3

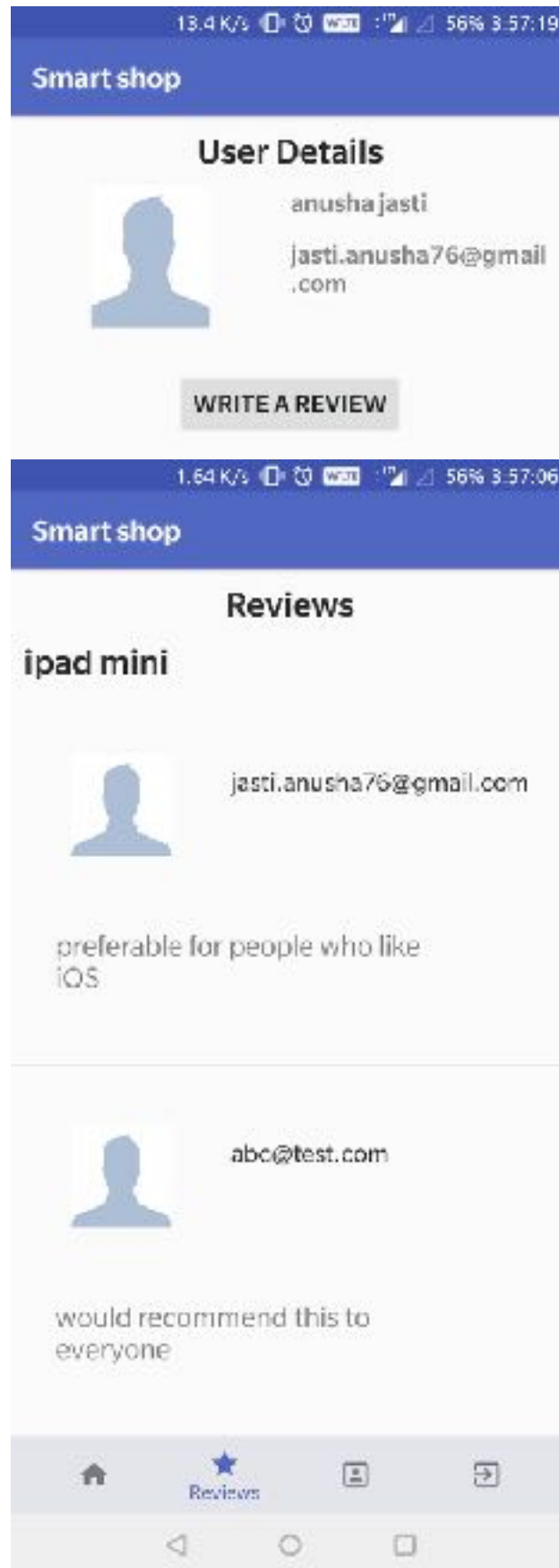
- In this increment we have taken another API (Ebay) and integrated both the API's together so that the results from both the APIs are displayed in a single page.



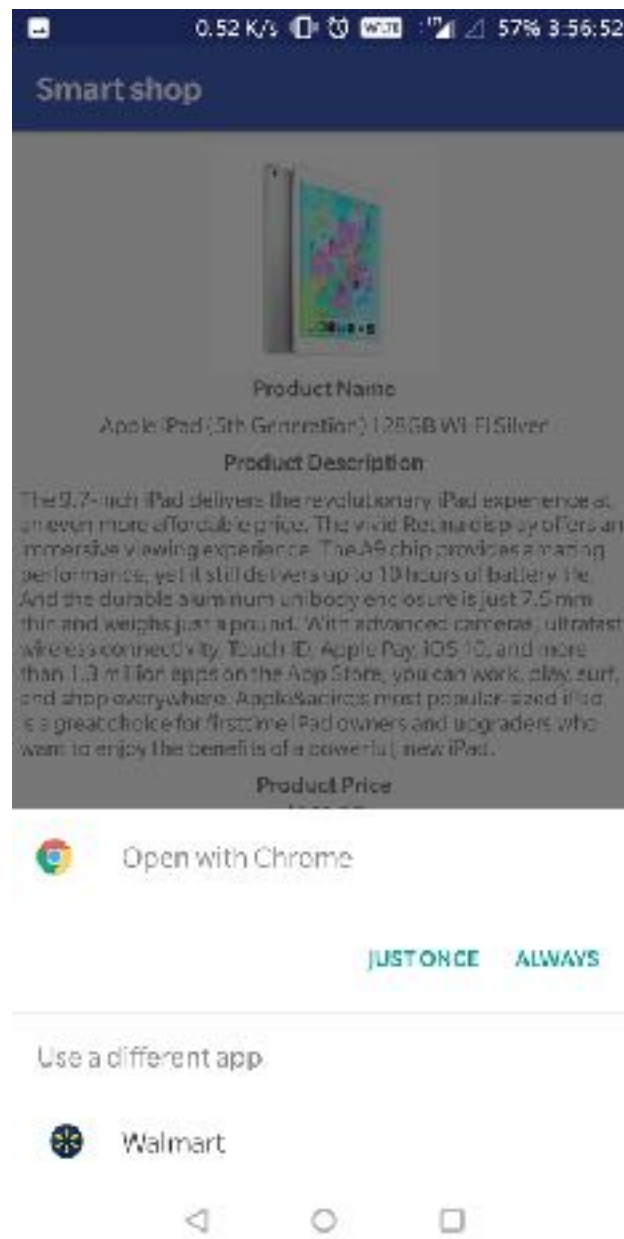
- If the user clicks on the search result they can also see different pictures of the product and also detailed description about it.



- We have also set up a user profile from which the user can write reviews which are displayed when another user searches for that product.



- All these reviews are stored using the FIREBASE database.
- If the user wants to buy a product, if they click the buy now option they are redirected to that website and they can buy the product from there.



TECHNOLOGY USED

ANDROID

Android studio is used to build the application which includes the login page, registration page, user profile, search and reviews.

```
//Firebase Authentication
public void Login(View v) {
    if (email.getText().toString().isEmpty() || password.getText().toString().isEmpty()) {
        Toast.makeText(this, "Email or Password is Empty", Toast.LENGTH_SHORT).show();
    } else {
        FirebaseAuth.getInstance().signInWithEmailAndPassword(email.getText().toString(), password.getText().toString()).addOnCompleteListener(new OnCompleteListener<>() {
            @Override
            public void onComplete(@NonNull Task<SignInResult> task) {
                if (task.isSuccessful()) {
                    Toast.makeText(this, "Login Successful", Toast.LENGTH_SHORT).show();
                    startActivity(new Intent(LoginActivity.this, MainActivity.class));
                } else {
                    Toast.makeText(this, "Login Failed", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}

//Firebase Authentication
@Override
public void onClick(View v) {
    if (v.getId() == R.id.login_button) {
        FirebaseAuth.getInstance().signInWithEmailAndPassword(email.getText().toString(), password.getText().toString()).addOnCompleteListener(new OnCompleteListener<>() {
            @Override
            public void onComplete(@NonNull Task<SignInResult> task) {
                if (task.isSuccessful()) {
                    Toast.makeText(this, "Login Successful", Toast.LENGTH_SHORT).show();
                    startActivity(new Intent(LoginActivity.this, MainActivity.class));
                } else {
                    Toast.makeText(this, "Login Failed", Toast.LENGTH_SHORT).show();
                }
            }
        });
    } else if (v.getId() == R.id.register_button) {
        FirebaseAuth.getInstance().createUserWithEmailAndPassword(email.getText().toString(), password.getText().toString()).addOnCompleteListener(new OnCompleteListener<>() {
            @Override
            public void onComplete(@NonNull Task<User> task) {
                if (task.isSuccessful()) {
                    Toast.makeText(this, "Registration Successful", Toast.LENGTH_SHORT).show();
                    startActivity(new Intent(LoginActivity.this, MainActivity.class));
                } else {
                    Toast.makeText(this, "Registration Failed", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}

//Firebase Authentication
@Override
public void onClick(View v) {
    if (v.getId() == R.id.logout_button) {
        FirebaseAuth.getInstance().signOut();
        startActivity(new Intent(LoginActivity.this, MainActivity.class));
    }
}

//Firebase Authentication
@Override
public void onClick(View v) {
    if (v.getId() == R.id.logout_button) {
        FirebaseAuth.getInstance().signOut();
        startActivity(new Intent(LoginActivity.this, MainActivity.class));
    }
}

//Firebase Authentication
@Override
public void onClick(View v) {
    if (v.getId() == R.id.logout_button) {
        FirebaseAuth.getInstance().signOut();
        startActivity(new Intent(LoginActivity.this, MainActivity.class));
    }
}

//End of Firebase Authentication
```

```

gso = new GoogleSignInOptions.Builder(GoogleSignInOptions.DEFAULT_SIGN_IN)
    .requestEmail()
    .build();

// Build a GoogleSignInClient with the options specified by you.
mgoogleSignIn = GoogleSignIn.getClient(this, gso);

// GoogleSignInAccount account = GoogleSignIn.getLastSignedInAccount(this);
//printToken(account);
this.findViewById(R.id.sign_in_button).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent signInIntent = mgoogleSignIn.getSignInIntent();
        startActivityForResult(signInIntent, requestCode 101);
    }
});

```

```

public void search(View v){
    productname=searchterm.getText().toString();
    WalmartmainSearch(searchterm.getText().toString());
    EbaymainSearch(searchterm.getText().toString());
}
}

```

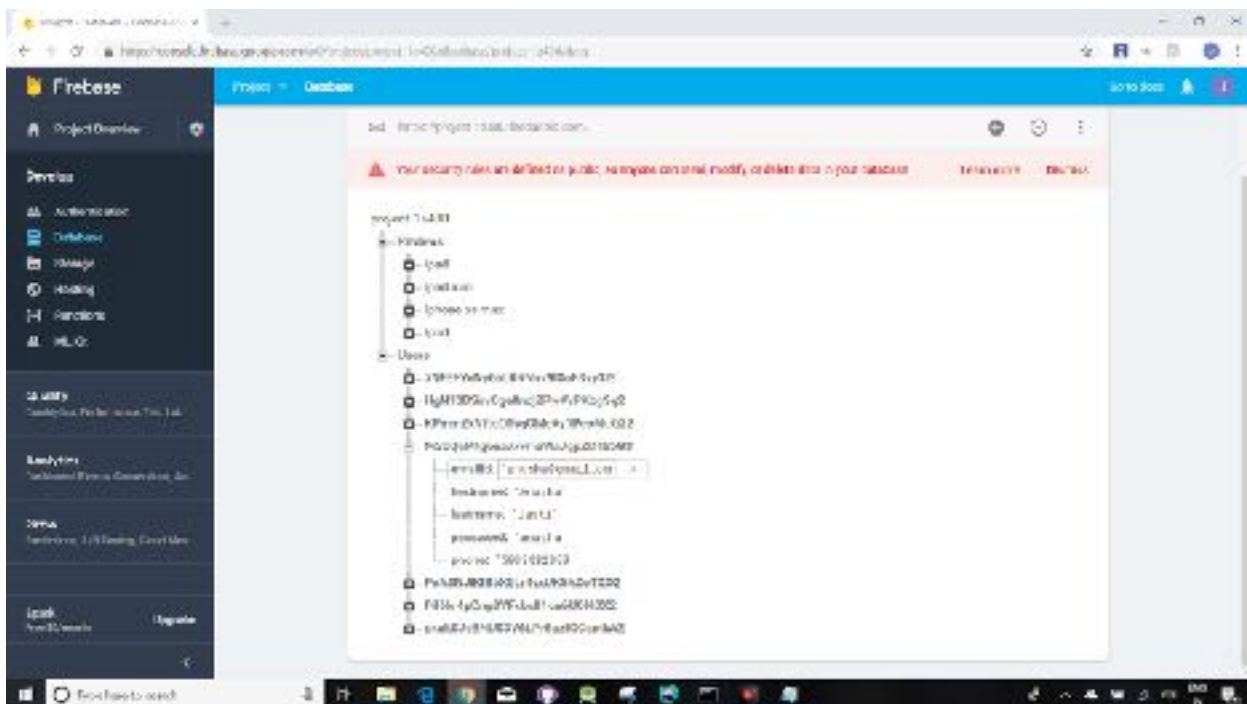
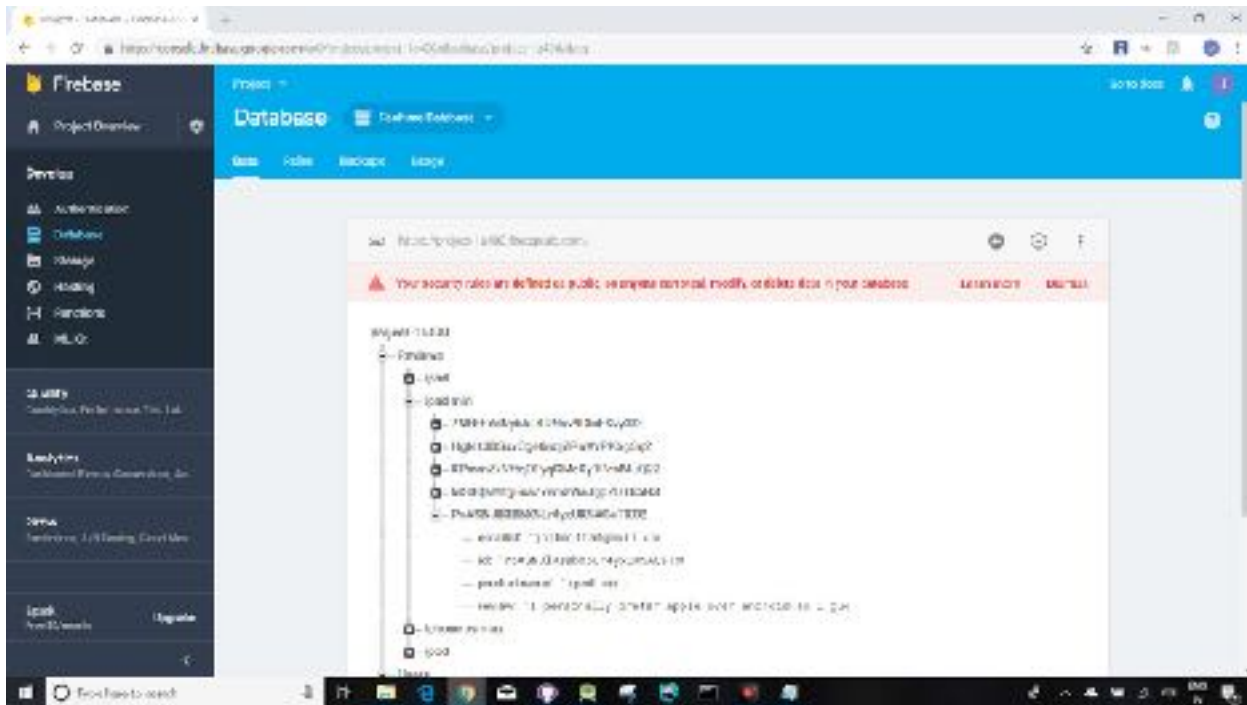
```

td=FirebaseDatabase.getInstance();
ref=fd.getReference().child(FirebaseAuth.getInstance().getCurrentUser().getUid());
ref.addValueEventListener(new ValueEventListener() {
    @Override
    public void onDataChange(@NonNull DataSnapshot dataSnapshot) {
        firstname=dataSnapshot.child("firstname").getValue(String.class);
        lastname=dataSnapshot.child("lastname").getValue(String.class);
        emailid=dataSnapshot.child("emailid").getValue(String.class);
        runOnUiThread(new Runnable() {
            @Override
            public void run() {
                name.setText(firstname+" "+lastname);
                email.setText(emailid);
            }
        });
    }
});
}

```

FIREBASE

Firebase is the database used to store the user details and also the reviews.



SERVICES USED/API'S USED

We have used Walmart and Ebay API's to get the search results

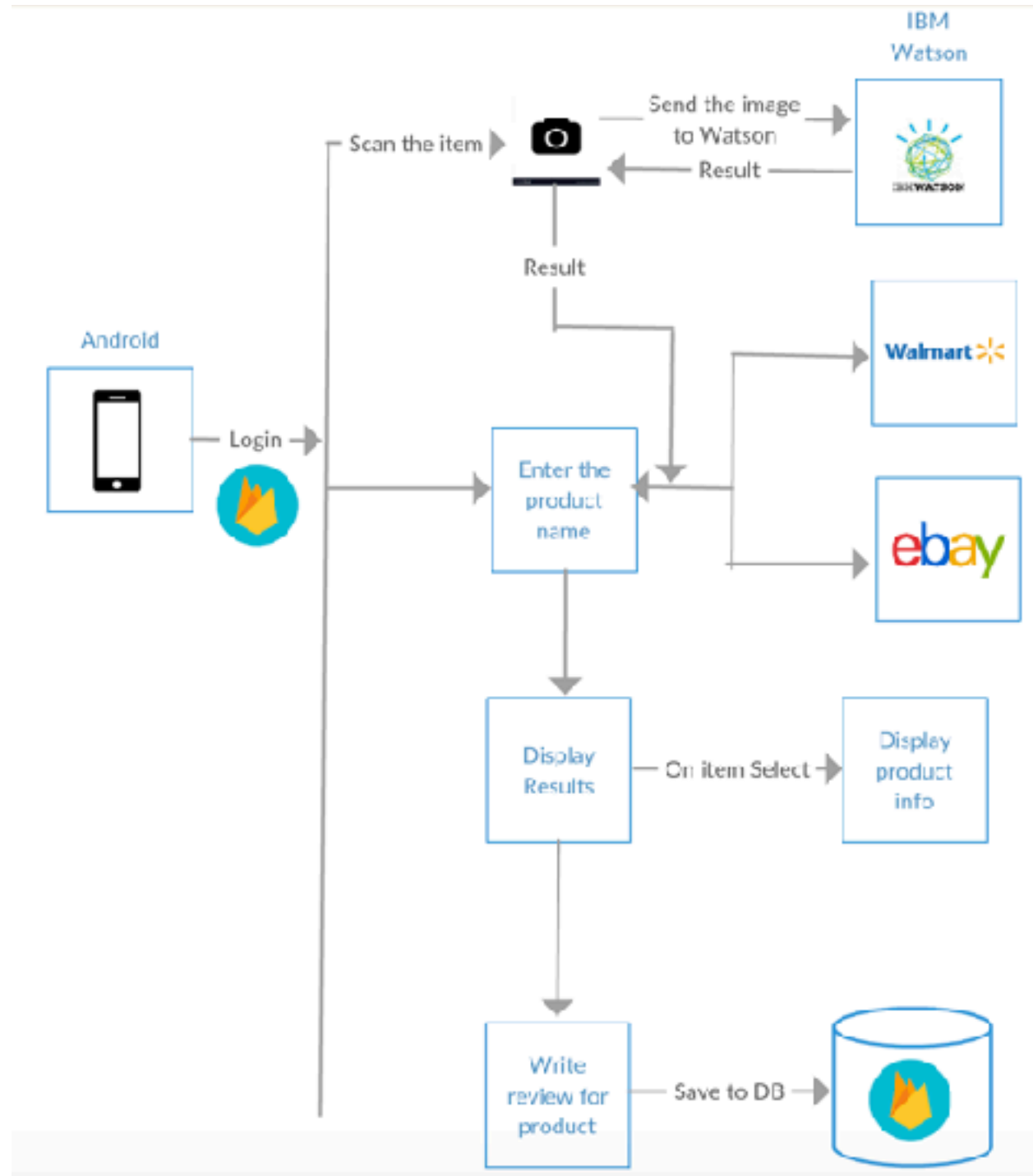
```
public void WalmartmainSearch(String searchterm){
    String url= "http://api.walmartlabs.com/v1/search?apiKey=kwkxupm3s275sdcnb42bakg&query="+searchterm;
    OkHttpClient client = new OkHttpClient();
    Request request = new Request.Builder()
        .url(url)
        .build();
    client.newCall(request).enqueue(new Callback() {
        @Override
        public void onFailure(Call call, IOException e) { System.out.println(e.getMessage()); }
        @Override
        public void onResponse(Call call, Response response) throws IOException {
            final JSONObject jsonResult;
            final String result = response.body().string();
        }
    });
}

public void EbaymainSearch(String searchterm){
    String url= "https://open.api.ebay.com/rest/api/2/sell/feedback/ratings?api_key=kwkxupm3s275sdcnb42bakg&query="+searchterm;
    OkHttpClient client = new OkHttpClient();
    Request request = new Request.Builder()
        .url(url)
        .build();
    client.newCall(request).enqueue(new Callback() {
        @Override
        public void onFailure(Call call, IOException e) {
            System.out.println(e.getMessage());
        }
    });
}
```

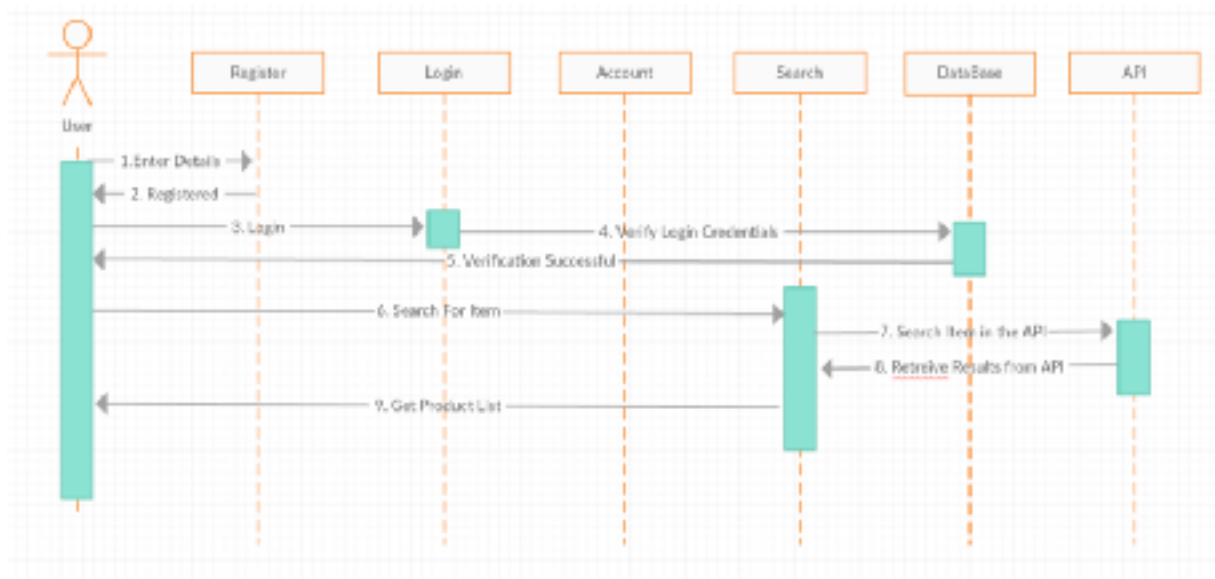
We have used IBM Watson Visual Recognition API to identify the images.

PICTORIAL REPRESENTATIONS

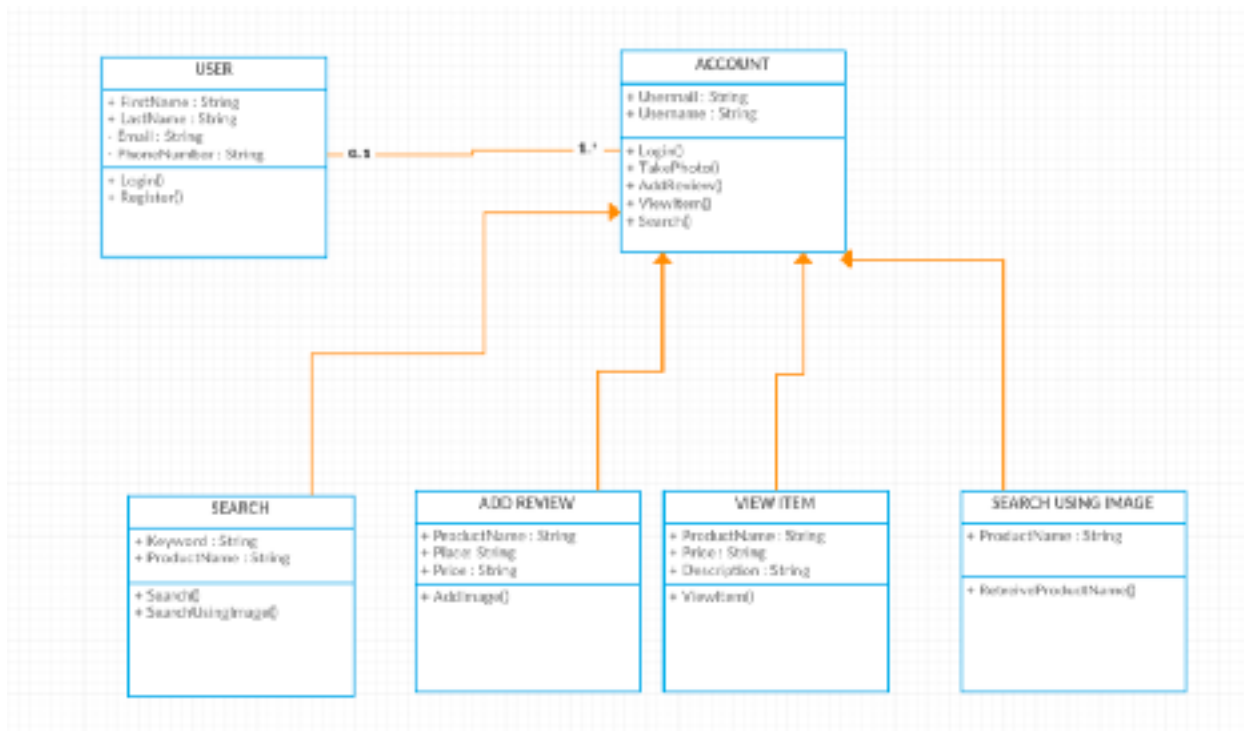
ARCHITECTURE DIAGRAM



SEQUENCE DIAGRAM



CLASS DIAGRAM



TEST CASES

Unit Test Cases :

S.NO	Test Case	Expected Output	Result
1.	User Registration	User should be able to register themselves in the application using the registration activity.	Pass
2.	Registration Validation	Whenever a user successfully fills in the form in the registration page, the details entered should be validated.	Pass
3.	Login Using Google Authentication	User should be able to login to the application using their own Google Account Credentials.	Pass
4.	Login Using Facebook Authentication	User should be able to login to the application using their Facebook account Credentials.	Pass
5.	User Login	User should be able to login into their account using the details entered at the time of registration.	Pass
6.	Communication with DataBase	Application should be able to get and post data in the database.	Pass
7.	Camera Plugin	User should be able to use the Camera feature in the application to take pictures.	Pass

8.	Keyword Search	User should be able to use the search field in order to search the item/ product they wish for.	Pass
9.	Retreive Result from API	The application should be successfully able to retrieve result from the API based on the search keyword entered by the user and display the results in the application.	Pass
10.	Retreive result form second API	The application should be successfully able to retrieve result from the API based on the search keyword entered by the user and display the results in the application.	Pass
11.	Add Review	User should be able to successfully write a review about any product in our application.	Pass
12.	Retreive Reviews	The application should be able to retrieve the reviews of a particular product when user clicks on the reviews button.	Pass

IMPLEMENTATION :

- The basic homepage of our application is the login page
- A user can successfully login using the basic login or by using the Oauth from Google and Facebook
- Then the user is redirected to the main page
- Main page consists of a camera button and a keyword search through which a user can search for the item they wish to shop for
- User can either enter the keyword manually or just take a picture using the native camera app and let the visula recognition do its job in identifying the image.
- Then on successful identification the user gets results from bothe Walmart and ebay API below in the list form where a bunch of products are being displayed.
- Upon clicking on each item, the user gets redirected to a page where the detailed description of the product along with the price details and a button enabled for buying the product is displayed.
- On clicking the Buy Now button the user is redirected to the official website form where the user can proceed in buying the product.
- If there is a an official Walmart or eBay app installed on your device, then the app asks us choose between the app and the chrome version for proceeding further.
- Each user has a user profile where the basic details are being displayed.- From the user profile , the user has an option for writing a review about any product which is being stored in our firebase.
- The user can view these reviews only after searching for a item/product .

- Then upon clicking the review tab then the user gets to view those reviews which are being retrieved from our firebase.
- There is also a separate tab for the logout , using which any authenticated user can successfully logout and our home page i.e the login page is being displayed after performing that action.
- Any android user can have our application installed using the apk of our project.

IMPLEMENTATION STATUS REPORT

WORK COMPLETED:

- 1.Login and Registration pages
- 2.Camera Integration
- 3.User profile and Reviews
4. API's integration

Contributions made by each person:

Anusha Jasti: Review Page, Retrieving data from second API, Retrieving reviews from database, Login Page, Login using Facebook OAuth, Home Page - 50%

Joshmitha Tammareddy: Retrieving reviews from database, Redesigned Main Page, Home Page , Registration Page, Login using Google OAuth - 50%

ISSUES AND CONCERNS

1. Developers account for many API's is not available (Amazon, Bestbuy etc)
2. Image Recognition: Sometime the brand of the product is not recognized instead only color is recognized and all the products in that color are displayed.

FUTURE WORK

In future we will add the following features:

- integrate more API's
- provide directions to the nearby store
- Adding wishlist
- Integrating the reviews from API's and firebase.

